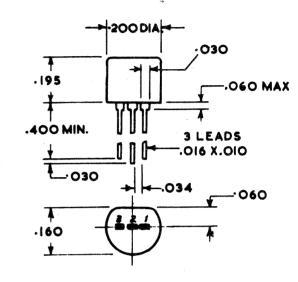


The AS303 is a silicon n-p-n planar transistor in an epoxy package, intended primarily for use in rf amplifier stages in T.V. and communication receivers. The type features low rf noise, high transition frequency, and low cutoff current.

DIMENSIONAL OUTLINE



Dimensions in inches

ABSOLUTE MAXIMUM RATINGS

Collector-base voltage = 45 volts
Collector-emitter voltage = 45 volts
(Base-emitter resistance

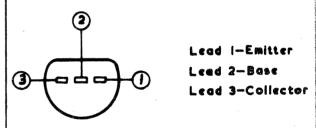
 $= 100 \text{K}\Omega$

Emitter-base voltage = 4.5 volts

Emitter current =

Base current ± 25mA

TERMINAL DIAGRAM



THERMAL RATINGS

Dissipation in an ambient temperature up to 25°C ---- 200mW max. Derate linearly to zero at 135°C .

50mA

During soldering lead temperature must not exceed 255° C for 10 secs. max. within 1/16" of can.

Storage temperature -25°C to 135°C.

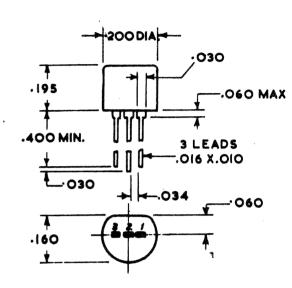
PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNITS
I _{CBO}	V _{CB} = 1V			20	nA
I _{CBO}	V _{CB} = 45V			1	μА
I _{EBO}	V _{EB} = 4.5V	,		1	μА
V _{EBF}	V _{CB} = 45V			1	٧
V _{CER}	$I_C = 100\mu A$, $R_{BE} = 100K\Omega$	45			٧
f _T	V _{CE} = 6V, I _E = 2mA, f = 100MHz		1000		MHz
h _{FE}	V. _{CE} = 6V, I _E = 1mA	40		270	
C _{b'c}	V _{CE} = 8V, I _E = 0			1.4	pF
R _{bb} , C _b , c	$V_{CE} = 6V$, $I_{E} = 2mA$, $f = 31.9 \text{ MHz}$		14		pS
NF	$V_{CE} = 10V$, $I_{E} = 2mA$, $f_{E} = 2mA$,	3.3		dB
	optimum source admittance,				
	common emitter circuit				
-					
**************************************		·		-	·
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	With the Compliments of				
	AMALGAMATED WIRELESS	VALVE	CO	PTV I	TN
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AS306 AS304 AS307 AS305 AS308

DIMENSIONAL OUTLINE



Dimensions in Inches

TERMINAL DIAGRAM

ABSOLUTE MAXIMUM RATINGS

Collector-base voltage 45 volts

These units are n-p-n silicon planar transistors in an epoxy package for general H.F. and V.H.F. application.

They are intended primarily for use

circuits of vhf television receivers; and are also useful in communications

Types AS304 and AS305 are vhf types,

for use as mixer and local oscillator

respectively in TV tuners to 220 MHz. Types AS306, AS307, and AS308 are for

These types feature high transition

frequencies and low cutoff currents.

in the tuner and if-amplifier

equipment up to about 260 MHz.

use in 36 MHz TV if-amplifiers.

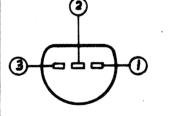
Collector-emitter voltage = 45 volts

(Base-emitter resistance $= 100 K\Omega$)

= 4.5 volts Emitter-base voltage

Emitter current 50mA

Base current 25mA



ad 3-Collector

THERMAL RATINGS

Dissipation in an ambient temperature up to 25°C ----- 200mW max. Derate linearly to zero at 135°C.

During soldering lead temperature must not exceed 255°C for 10 secs. max. within 1/16" of can.

 $-25^{\circ}C$ to $135^{\circ}C$. Storage temperature

PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNITS
V _{BE}	I _{BE} = 20mA			1.2	٧
I _{CBO}	V _{CB} = 1V			20	n A
ICBO	V _{CB} = 45V			1	μА
I _{EBO}	V _{EB} = 4.5V	·		1	μA
V _{EBF}	V _{CB} = 45V			1	v
V _{CER}	$I_{C} = 100 \mu A$, $R_{BE} = 100 K Ω$	45		·	V
f _T	$V_{CE} = 6V$, $I_{E} = 2mA$, $f=100MHz$			·	
	AS304, AS305 .		1000		MHz
	AS306, AS307, AS308		800		MHz
I _B	V _{CE} = 6V, I _E = 1mA				
	AS304	3.6	s	25	μA
	AS305, AS308	3.6		37	μ A
	AS306	6		25	μA
	AS307	11.6		37	μA
C _{b'c}	$V_{CE} = 8V$, $I_{E} = 0$			1.4	pf
R _{bb} ,C _b ,c	$V_{CE} = 6V$, $I_{E} = 2mA$, $f=31.9MHz$		14		ps
	With the Compliments of	A DESCRIPTION OF THE STATE OF T			
	AMALGAMATED WIRELESS VA	LVE C	D. PT	Y. LTI	
	VICTORIA RD., RYDALMERE	РНО	NE: 6	38-04	11

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Typical Input Characteristics

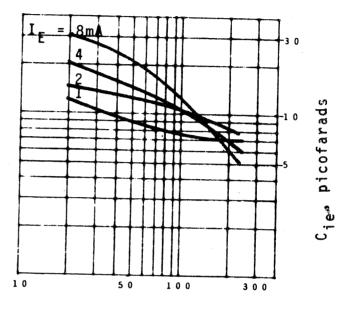
Common Emitter Circuit, Base Input Collector-to-emitter volts $(V_{CE}) = 10$

AS303 AS304 AS305 AS306 AS307 AS308

Fig. 1
Input Capacitance Cie

Cie is constant within about 3% between

VCE = 5 and VCE = 15



Frequency MHz

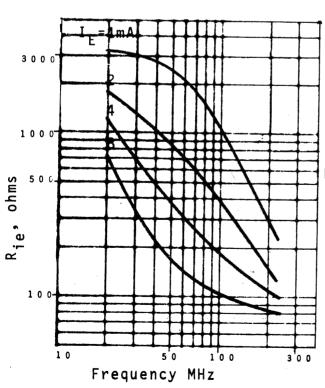


Fig. 2

Input Resistance Rie

Rie increases about 2% per volt increase in VCE between

VCE = 5 and VCE = 15

Typical Transconductance Characteristics

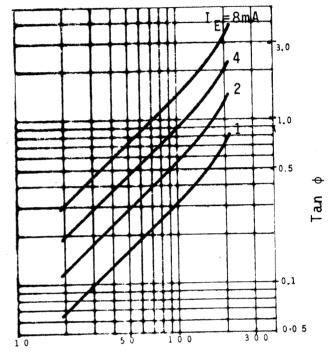
Common Emitter Circuit, Base Input Collector-to-emitter volts $(V_{CE}) = 10$

AS304 AS305 AS306 AS307 AS308

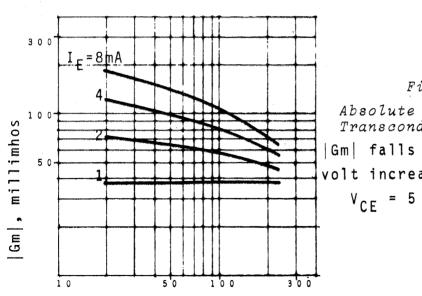
AS303

Fig. 3

Tangent of Phase Angle, ϕ Tan ϕ is constant within 1% between $V_{CE} = 5$ and $V_{CE} = 15$.



Frequency MHz



Frequency MHz

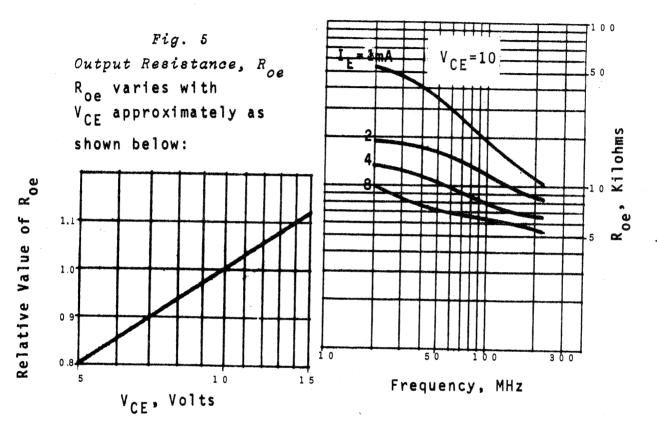
Fig. 4

Absolute Magnitude of Transconductance, |Gm|

|Gm| falls about 0.4% per volt increase in V_{CE} between V_{CE} = 5 and V_{CE} = 15

Typical Output and Feedback Characteristics
Common Emitter Circuit, Base Input

AS303 AS304 AS305 AS306 AS307 AS308



Output Capacitance, Coe:

 $\rm C_{oe}$ has typically the value 2.1 pF and is essentially independent of frequency, $\rm I_E$ and $\rm V_{CE}$

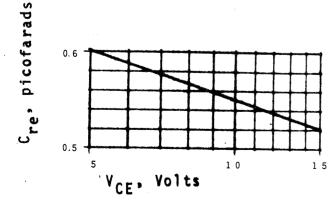


Fig. 6 Feedback capacitance, C_{re} is essentially independent of frequency and $I_{\rm E}$

AS303 AS304 AS305 AS306 AS307 AS308

CHARACTERISTICS AT 25°C Y PARAMETER VALUES

PARAMETER	CONDITIONS			MIN.	TYP.	MAX.	UNITS
	f, MHz	I _E , mA	V _{CE} , volts				
Сое	20 - 220	1 - 8	5 - 15		2.1		pf
Roe	5 5	1.5	7.5	<u> </u>	60		ΚΩ
gegin engels kanta sindiffi di kantan kantan antik milan interiori di ka	t	8	II		7		KΩ
general Lasting agus a sui stàit in 1964 de mhaille chiu anns du beacht, in idir an thuairt a	110	1.5	II	.i	30		KΩ
	11	6	п		6.5		ΚΩ
	220	1.5	11		10		KΩ
	l1	4		and the second s	7		KΩ
Cre	220	1	5		.60		pf
	II	11	10		.55		pf
	п	l II	15		.52		pf
		ersen erste mann-geannessen erste men den alle erste regen					
			The second se				
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	VICTOR	IA RD., R'	YDALMERE	PHON	E: 63	8-041	
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